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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/904,312 07/31/97 KAWAI

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EXAMINER

LM01/1230

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ART UNIT

PAPER NUMBER

2746

DATE MAILED:

12/30/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
08/904,312

Applicant(s)
Kawal et al.

Examiner
LEE NGUYEN

Group Art Unit
2746



☒ Responsive to communication(s) filed on Oct 18, 1999

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1035 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) 1-16, 19-24, and 27-38 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-16, 19-24, and 27-38 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

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DETAILED ACTION

1. This office action is responsive to the communication filed 10/18/99.
2. Claims 17-18 and 25-26 have been canceled. Claims 1-16, 19-24 and 27-38 remain in prosecution.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 5-8 and 31-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 5, it is unclear to what selected frame the term "said plural number of times" refers. The term "said plural number of times" does not necessarily have the meaning of "the plural number of error correction request signals" as claimed.

Dependent claims 6, 31-34 are rejected for the same reason.

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Regarding claim 7, the claim lacks antecedent basis for the same reason as set forth in claim 5.

Dependent claims 8, 31-34 are rejected for the same reason.

Regarding claims 9-10, it is unclear to what the term "said new frame is greater by less than a predetermined number than a predetermined number than the earliest of said frames which has been transmitted to but not received by any one of said receive stations".

In the following art rejection, the new limitation as recited in the independent claims 9-10 are still rejected based on the same ground of the previous action.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 19-20, 22-23, and 27-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Spragins et al. (Telecommunications Protocols and Design, Addison-Wesley Publishing Company, July 1992).

Regarding claims 19-20 and 22-23, Spragins teaches an apparatus and method for receiving data from a broadcast station, comprising receiving said data I,0,0 (fig. 7.13b) and transmitting to the broadcast station (the primary station) at predetermined intervals (I,0,0 to I,2,0,P) in responsive to

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a polling signal P an error status signal REJ,1,F which indicates whether error correction information is required from the central station (page 328 section 7.6.3, figs. 7.13a-7.13b).

Regarding claims 27-30, Spragins teaches an apparatus and method for receiving data from a broadcast station, comprising receiving said data in a format comprising a sequence of frames (page 318, receive count of N frames); and transmitting signals to said broadcast in a format including receive state information indicating the sequence number of the last in sequence of the received frames (page 318, supervisory frames can also be used for acknowledgments, receive count of 3), but not including a transmit state field (page 318, ACK and NACK frames each use a received count, but neither uses a send count). Spragins also teaches the frame format in Byte-Count-Oriented Protocols in Data Link Layer Protocols, page 316).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and

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invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wiedeman (U.S. 5,303,286) in view of Smolinske et al. (U.S. 5,487,068).

Regarding claims 1-4, Wiedeman teaches an apparatus for broadcasting data relating to the status of user terminals in a mobile communications system from a central station 28 (fig. 2) having a database 20 as claimed to plurality of local stations 37, each having a local data base 27 as claimed, the apparatus comprising means for broadcasting said data to each of said local stations 37. Wiedeman fails to take into account of error transmission when the central station transmits information in packets of frames to the local stations 37 which requires error detection in each local stations 37, wherein each local station 37 requests from the central station 28 for selective error correction and the central station 28 retransmits the selected frames in response. The concept of using a selectively automatic repeat request (selective repeat ARQ) for requesting a selected retransmission frame when error occurs from a local station to the central station is conventionally well known, which is taught by Smolinske. Smolinske teaches that when an error packet occurs the subscriber unit transmits a selective-repeat ARQ to the base station and the base station retransmits the selected packet to the subscribers (col. 2, lines 16-43). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the error detection and selected

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error correction of Smolinske to the system of Wiedeman in order to provide reliable packet level communication.

9. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smolinske et al. (U.S. 5,487,068) in view of Spragins et al. (Telecommunications Protocols and Design, Addison-Wesley Publishing Company, July 1992).

Regarding claims 9-10, Smolinske teaches a method and apparatus for broadcasting data to a plurality of data receiving stations, comprising: a base site transmitting data in a common channel in a format comprising a plurality of frames to receiving stations (col. 2, lines 31-33); receiving error correction request signals indicating selected ones of said frames as claimed (selective repeat ARQ, col. 2, lines 33-39); retransmitting said selected frames to said receiving stations and receiving from each of said local stations acknowledgment signals indicating the earliest in sequence of said frames which has not been received by that local station (col. 2, lines 36-42). Smolinske fails to explicitly teach that the selective repeat ARQ is implemented under high level data link format HDLC in which a new frame which has not previously been broadcast is broadcast only if the sequence order of said new frame is less than a predetermined number greater than the earliest of said frames which has not been received by any one of said local stations. This technique is conventionally well known in the art, as taught by Spragins. Spragins teaches that a new frame I,2,0,P (fig. 7.13b) which has not previously been broadcast is broadcast only if the sequence order 2 of said new frame is less than a predetermined number 3 of frame I,3,0 greater than 1 the earliest of said frames I,1,0 which has not

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been received by any one of local stations (page 328, section 7.6.3, figs. 7.13a and 7.13b). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Spragins to the apparatus of Smolinske in order to reduce transmission delay.

10. Claims 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smolinske et al. (U.S. 5,487,068) in view of and Ellis et al. (U.S. 5,497,371).

Regarding claims 11-12 and 14-15, Smolinske teaches a method and apparatus for broadcasting data to a plurality of data receiving stations, comprising: a base site transmitting data in a common channel in a format comprising a plurality of frames to receiving stations (col. 2, lines 31-33); receiving error correction request signals indicating selected ones of said frames as claimed (selective repeat ARQ, col. 2, lines 33-39); retransmitting said selected frames to said receiving stations in response to the request signals (col. 2, lines 36-42). The frames of Smolinske inherently includes frame sequence information N(S) indicating the sequence of each frame and receive state information N(R) indicating the sequence of any frames received from any of the receive stations because it is implemented with selective repeat ARQ protocol in the HDLC layer which is ISO/IEC 7809. Smolinske differs from the claim invention in that the frame does not include receive state information N(R) indicating the sequence of any frames. However, this technique is conventionally well known in the art, as taught by Ellis. Ellis teaches an HDLC format frame which includes the frame sequence number N(S) 4, but not including receive state information N(R) indicating the sequence of any frames (figs. 3-4). It would have been obvious to one of ordinary skill in the art at

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the time the invention was made to provide the teaching of Ellis to the apparatus of Smolinske so that higher priority of information packets can be transmitted over a single communication link.

Regarding claims 13 and 16, Smolinske as modified fails to teach that the N(S) sequence number is eleven bits in length. A skilled artisan would find that providing the N(S) sequence number with 11 bits in length or any other lengths obvious because it is not critical in the invention. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the 11 bits in length to N(S) sequence number of Smolinske in order to reduce overhead signalling in the communication system.

11. Claims 21/19, 21/20, 24/22 and 24/23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spragins et al. (Telecommunications Protocols and Design, Addison-Wesley Publishing Company, July 1992).

Regarding claims 21/19, 21/20, 24/22, 24/23, Spragins also teaches a plurality of frames I,0,0-I,2,0,P (fig. 7.13b). The high data level control link HDLC of Spragins provides the error correction request signal REJ,1,F (fig. 7.13b) indicating negative acknowledgment (NACK) or selected ones of frames which were not received correctly. Spragins differs from the claim invention in that the error correction request signal REJ,1,F (fig. 7.13b) can also indicate positive acknowledgment (ACK) or selected ones of frames which were received correctly. However, according to Spragins a secondary station can provide an error status signal that comprises either an error correction request signal indicating a frame which were not correctly received NACK4 (fig. 7.9) or a signal that indicates that

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no error correction is required ACK6 using Byte-Count-Oriented Protocols (pages 319-321). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Byte-Count-Oriented Protocols to the HDLC protocols in Spragins in order to allow piggybacking of positive acknowledgments and acknowledgment of multiple frames with one response.

12. Claims 31/1/2, 31/9, 31/11/12/13, 31/19/20, 31/27/28, 32/3/4, 32/10, 32/14/15/16, 32/22/23, 32/29/30, 33/9, 33/11/12/13, 33/19/20, 33/27/28, 34/10, 34/14/15/16, 34/22/23 and 34/29/30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wiedeman (U.S. 5,303,286) in view of Smolinske et al. (U.S. 5,487,068) and Spragins et al. (Telecommunications Protocols and Design, Addison-Wesley Publishing Company, July 1992) and further in view of Ellis et al. (U.S. 5,497,371).

Regarding claims 31/1/2, 31/9, 31/11/12/13, 31/19/20, 31/27/28, 32/3/4, 32/10, 32/14/15/16, 32/22/23, 32/29/30, 33/9, 33/11/12/13, 33/19/20, 33/27/28, 34/10, 34/14/15/16, 34/22/23 and 34/29/30, Wiedeman does not explicitly teach that the data is broadcast from the network control 28 via satellite 22 (fig. 2 of Wiedeman). However, from the system of Wiedeman, the data could be broadcast by either satellite 22 or by the network connection 32. Consequently, it depends on the designer to use either of the two networks to convey data. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a satellite to transfer data where wireline connection is not available. Wiedeman also teaches the database of each received station stores the status of user terminals as claimed (fig. 2 of Wiedeman).

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13. Claims 35/21, 36/24, 37/21 and 38/24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spragins et al. (Telecommunications Protocols and Design, Addison-Wesley Publishing Company, July 1992) and Wiedeman (U.S. 5,303,286).

Regarding claims 35/21, 36/24, 37/21 and 38/24, Spragins fails to teach the limitation as claimed. As stated above in the rejection of claims 1-4, Wiedeman teaches a satellite system for broadcasting data information. Wiedeman does not explicitly teaches that the data is broadcast from the network control 28 via satellite 22 (fig. 2 of Wiedeman). However, from the system of Wiedeman, the data could be broadcast by either satellite 22 or by the the network connection 32. Consequently, it depends on the designer to use either of the two networks to convey data. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a satellite to transfer data where wireline connection is not available. Wiedeman also teaches the database of each received stations stores the status of user terminals as claimed (fig. 2 of Wiedeman).

Response to Arguments

14. Applicant's arguments filed 10/18/99 have been fully considered but they are not persuasive.

On page 8 of Applicant's remarks, regarding the rejection of claims 19-20 and 22-23, Applicant argues that based on the random nature of an error event, it follows that Spragins does not transmit the error correction request signal at predetermined intervals.

In response, this argument is incorrect. According to Spragins, the primary first sends three information frames to the secondary, with the P bit set in every third frame to allow the secondary

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to respond, (see page 328, figs. 7.13a-d). This clearly indicates that the error request signals are transmitted at predetermined intervals.

On page 9 of Applicant's remarks, regarding the rejection of claims 27-30, Applicant argues that Spragins does not disclose the limitation of "but not including a transmit field".

In response, Spragins teaches in page 318 that ACK and NACK frames each use a received count, but neither uses a send count which is the transmit field.

On page 10 of Applicant's remarks, regarding the rejection of claims 1-4, Applicant argues that the term "broadcast" according to Applicant is used for denoting a general and non-addressed transmission of data.

In response, first, is this argument in the claims? The answer is no. Second, Applicant should compare the present invention figure 1 with figure 2 of Wiedeman. There is no difference in broadcasting the information.

In the same paragraph, Applicant further argues that independent claim 1 requires that data is broadcasted in a common channel receivable by each of the claimed local stations.

In response, what is Applicant's common channel? No definition is defined in the claim. Furthermore, if the claims require error control which is HDLC of the packet switch and which is exactly what Wiedeman (see Applicant's specification, page 2) and Smolinske approach. Therefore, the combination of Wiedeman and Smolinske does provide broadcasting of data on a common channel.

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On page 10 of Applicant's remarks, regarding the rejection of claims 9-10, Applicant argues that neither Smolinske nor Spragins disclose retransmitting the claimed selected frame to the receiving stations such that a new frame which has not previously broadcast is broadcast only if the sequential order of the new frame is greater by less than a predetermined number than the earliest of the frames which has been transmitted to but not been received by any one of the local stations.

In response, first the new limitation added is unclear. Second, this unclear limitation is interpreted and rejected as set forth above in the rejection of claims 9-10.

Regarding the argument of the term "broadcasting" in independent claims 11 and 14, this argument has been responded as stated above concerning the rejection of claims 1-4.

Regarding the argument of random event in dependent claims 21/19, 21/20, 24/22 and 24/23, this argument has been responded as stated above concerning the rejection of claims 19 and 22.

Conclusion

15. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the

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date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Nguyen whose telephone number is (703) 308-5249. The examiner can normally be reached on Monday-Friday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang, can be reached on (703) 305-4895.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Any response to this final action should be mailed to:

Box AF

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

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**(703) 305-9051, (for formal communications; please mark
"EXPEDITED PROCEDURE")**

Or:

**(703) 305-9508, (for informal or draft communications, please
label "PROPOSED" or "DRAFT")**

**Hand-delivered responses should be brought to Crystal Park II, 2021
Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).**

Lee Nguyen

December 22, 1999

A handwritten signature in black ink, appearing to read 'Lee Nguyen', written in a cursive style.

**Lee Nguyen
Primary Examiner**